

In the Claims:

Please amend claims 1-33, as follows:

CLAIMS

1. (Currently Amended) A ~~C~~charged particle beam device, comprising:
an emitter ~~(12)~~ for emitting charged particles;
an aperture arrangement ~~(26; 86)~~ with at least one aperture ~~(36)~~ for blocking a part of the emitted charged particles, whereby the aperture arrangement forms a multi-area sub-beam charged particle beam with a cross-section-area and a cross-section-circumference, whereby a ratio between the cross-section-circumference and the cross-section-area is increased by at least 15% as compared to the ratio between a cross-section-circumference and a cross-section-area of a circular beam with the same cross-section-area as the multi-area sub-beam charged particle beam; and
an objective lens ~~(18)~~ for focusing the multi-area sub-beam charged particle beam onto the same location within the focal plane.
2. (Currently Amended) The device ~~Device~~ according to claim 1, whereby the ratio between the circumference of the cross-section and the cross-section-area is increased by at least 40% as compared to the ratio between the circumference of the cross-section and the cross-section-area of a circular beam with the same cross-section-area.
3. (Currently Amended) The device ~~Device~~ according to claim 1 ~~any of claims 1 to 2~~, whereby the aperture arrangement ~~(26; 86a,b)~~ with at least one aperture comprises at least two apertures ~~(36)~~, whereby the multi-area sub-beam charged particle beam is provided as at least two independent charged particle beams.
4. (Currently Amended) The device ~~Device~~ according to claim 1 ~~any of claims 1 to 3~~, whereby the aperture arrangement ~~(26; 86)~~ with at least one aperture ~~(36)~~ forms a multi-area sub-beam charged particle beam with cross-like shape.

5. (Currently Amended) A charged ~~Charged~~ particle beam device, comprising:
an emitter ~~(12)~~ for emitting charged particles;
an aperture arrangement ~~(26; 86)~~ with at least one aperture ~~(36)~~ for blocking a part of the emitted charged particles, whereby the aperture arrangement forms a multi-area sub-beam charged particle beam with a cross-like shape; and
an objective lens ~~(18)~~ for focusing the at least two independent charged particle beams onto the same location within the focal plane.
6. (Currently Amended) The device ~~Device~~ according to claim 5, whereby the multi-area sub-beam charged particle beam is provided with a 4-fold symmetry around an optical axis of the device.
7. (Currently Amended) The device ~~Device~~ according to claim 5 ~~any of claims 5 to 6~~, whereby the aperture arrangement ~~(26; 86a,b)~~ with at least one aperture comprises at least two apertures ~~(36)~~, whereby the multi-area sub-beam charged particle beam is provided as at least two independent charged particle beams.
8. (Currently Amended) A charged ~~Charged~~ particle beam device, comprising:
an emitter ~~(12)~~ for emitting charged particles;
an aperture arrangement ~~(26; 86a,b)~~ with at least one aperture ~~(36)~~ for separating the emitted charged particles into at least two independent charged particle beams; and
an objective lens ~~(18)~~ for focusing the at least two independent charged particle beams onto the same location within the focal plane.
9. (Currently Amended) The device ~~Device~~ according to claim 8, whereby the aperture arrangement forms a multi-area sub-beam charged particle beam with a cross-like shape.

10. (Currently Amended) The device ~~Device~~ according to claim 8 ~~any of claims 1 to 9~~, whereby the emitter is a quasi spot-like emitter with a source diameter below 200 nm.

11. (Currently Amended) The device ~~Device~~ according to claim 8 ~~any of claims 3, 4 or 8 to 10~~, whereby the at least two independent charged particle beams have a distance (D) with respect to each other such that no interaction occurs between the at least two independent charged particle beams.

12. (Currently Amended) The device ~~Device~~ according to claim 8 ~~any of claims 3, 4 or 8 to 11~~, whereby the at least two independent charged particle beams have a distance (D) with respect to each other, whereby the distance has about the same dimension as the diameter of the at least two apertures ~~(36)~~.

13. (Currently Amended) The device ~~Device~~ according to claim 8 ~~claims 3, 4 or 8 to 12~~, whereby the at least two apertures ~~(36)~~ are formed by a segmented annular aperture.

14. (Currently Amended) The device ~~Device~~ according to claim 8 ~~any of claims 3, 4 or 8 to 13~~, whereby the at least two apertures ~~(36)~~ have an elongated shape with a long axis and short axis, whereby the long axis is arranged radially with respect to an optical axis ~~(1)~~ of the charged particle beam device.

15. (Currently Amended) The device ~~Device~~ according to claim 8 ~~any of claims 3, 4 or 8 to 14~~, whereby the at least two apertures ~~(36)~~ are arranged rotational-symmetrical to an optical axis ~~(1)~~ of the charged particle beam device.

16. (Currently Amended) The device ~~Device~~ according to claim 8 ~~any of the preceding claims~~, whereby the at least one aperture of the aperture arrangement has a 4-fold symmetry shape.

17. (Currently Amended) The device ~~Device~~ according to claim 8-14, whereby the at least one aperture of the aperture arrangement has a cross-like shape.

18. (Currently Amended) The device ~~Device~~ according to claim 8 15 ~~any of claims 14 to 15~~, whereby the at least one aperture of the aperture arrangement has a cross-like shape formed by four connected elongated apertures.

19. (Currently Amended) The device ~~Device~~ according to claim 8 18 ~~any of the preceding claims~~, whereby the aperture arrangement (26; ~~86a,b~~) comprises four apertures (36).

20. (Currently Amended) The device ~~Device~~ according to claim 8 19 ~~any of the preceding claims~~, further comprising a spherical aberration correction element (~~52~~).

21. (Currently Amended) The device ~~Device~~ according to claim 20 8 ~~any of claims 7 to 8~~, wherein further comprising the spherical aberration correction element (~~52~~) is provided by an octopole element.

22. (Currently Amended) The device ~~Device~~ according to claim 8 21 ~~any of the preceding claims~~, whereby the aperture arrangement (~~26; 86~~) is positioned between a source or virtual source (~~12~~) and a charged particle beam lens positioned closest to the source.

23. (Currently Amended) The device ~~Device~~ according to claim 8 22, whereby the aperture arrangement is integrated in an anode or in an extractor.

24. (Currently Amended) The device ~~Device~~ according to claim 8 23 ~~any of the preceding claims~~, further comprising ~~at least one feature from the group of:~~

a charged particle column length below 300 mm;

an optical system including the objective lens (~~18~~), whereby the optical system is arranged such that no crossover is generated;

an accelerating means for increasing the charged particle energy while traveling through the charged particle device and a decelerating means for decreasing the charged particle energy for impingement on a specimen; or and

a control means for interaction optimizing the at least two independent charged particle beams.

25. (Currently Amended) Method of operating a charged particle beam device, comprising the steps of:

illuminating an aperture arrangement ~~(26; 86)~~ with at least one aperture ~~(36)~~ for blocking a part of the emitted charged particles, whereby the aperture arrangement forms a multi-area sub-beam charged particle beam with a cross-section-area and a cross-section-circumference, whereby a ratio between the cross-section-circumference and the cross-section-area is increased by at least 15% as compared to the ratio between a cross-section-circumference and a cross-section-area of a circular beam with the same cross-section-area as the multi-area sub-beam charged particle beam; and

focusing the multi-area sub-beam charged particle beam with an objective lens ~~(18)~~ onto the same location of a specimen ~~(19)~~.

26. (Currently Amended) The method Method of operating a charged particle beam device according to claim 25, wherein the illuminating step comprises:

generating at least two independent charged particle beams; ,

27. (Currently Amended) The method Method of operating a charged particle beam device according to claim 26, whereby the at least two independent charged particle beams are generated on a circle around an optical axis ~~(1)~~ of the charged particle device.

28. (Currently Amended) The method Method of operating a charged particle beam device according to claim 26 ~~any of claims 26 to 27~~, whereby the at least two apertures are provided such that no significant interaction between the at least two independent charged particle beams occur.

29. (Currently Amended) The method Method of operating a charged particle beam device according to claim 25 ~~any of claims 25 to 28~~, whereby the aperture arrangement

is illuminated such that the at least one aperture is homogeneously illuminated
~~eliminated~~.

30. (Currently Amended) ~~The method~~ Method of operating a charged particle beam device according to claim 25 ~~any of claims 26 to 29~~, further comprising the step:

interaction-optimizing each of the at least two independent charged particle beams.

31. (Currently Amended) ~~The method~~ Method of operating a charged particle beam device according to claim 25 ~~any of claims 25 to 30~~, whereby the charged particles are energized to impinge on the specimen ~~(19)~~ with an energy below 3 keV.

32. (Currently Amended) ~~The method~~ Method of operating a charged particle beam device according to claim 25 ~~any of claims 25 to 31~~, further comprising the step:

correcting spherical aberrations, which are introduced by guiding parts of the multi-area sub-beam charged particle beam off-axis.

33. (Currently Amended) ~~The method~~ Method of operating a charged particle beam device according to claim 25 ~~any of claims 25 to 32~~, further comprising the step:

repeating imaging steps several times to generate a set of focus series measurements; and

generating a 3-dimensional image by superposing the set of focus series measurements.